

IN THE CLAIMS:

Please cancel Claims 1, 2, 4 to 6, 8 to 12, 21, 23 to 30, 32, 42, 44 without prejudice or disclaimer of subject matter. Please amend Claims 3, 7 and 43 as follows.

The claims, as pending in the subject application, read as follows:

1 to 2. (Cancelled).

3. (Currently Amended) A radiation detector ~~according to claim 1~~ having a wavelength conversion member made of column-shaped crystal for converting radiation into light and a sensor panel for detecting light converted by the wavelength conversion member,

wherein the wavelength conversion member has a projection with a flat surface disposed in opposition to the sensor panel,

and wherein the wavelength conversion member and the sensor panel are bonded together by an adhesion layer, and the adhesion layer has such a thickness as a resolution response to light converted by the wavelength conversion member is at least 0.7 or larger.

4 to 6. (Cancelled).

7. (Currently Amended) A radiation detector ~~according to claim 6~~ having a wavelength conversion member made of column-shaped crystal for converting radiation into light and a sensor panel for detecting light converted by the wavelength conversion member,

wherein the wavelength conversion member has a projection with a surface processed so as to be made parallel to a surface of the sensor panel,

wherein the wavelength conversion member and the sensor panel are bonded together by an adhesion layer, and the adhesion layer has such a thickness as a resolution response to light converted by the wavelength conversion member is at least 0.7 or larger.

8 to 12. (Cancelled).

13. (Previously Presented) A scintillator panel having a wavelength conversion member for converting radiation into light,

wherein a first protective layer is formed on the wavelength conversion member, projections on a surface of the wavelength conversion member are made small or removed from the upper side of the first protective layer, and thereafter a second protective layer is formed.

14. (Original) A scintillator panel according to claim 13, wherein a height of each projection is 50 μm or lower before the second protective layer is formed.

15. (Previously Presented) A scintillator panel according to claim 13, wherein the wavelength conversion member is made of Cesium Iodide.

16. (Original) A radiation detector having the scintillator panel recited in claim 13 and a sensor panel, wherein a plane of the scintillator panel whose projections and recesses are made small is bonded to a light reception plane of the sensor panel.

17. (Original) A radiation detector according to claim 16, wherein the second protective layer also serves as an adhesion layer for bonding the scintillator panel and the sensor panel.

18. (Original) A radiation detector according to claim 16, wherein the wavelength conversion member and the sensor panel are bonded together by an adhesion layer, and the projections are made small so that a thickness of the adhesion layer is 50 μm at a maximum or thinner.

19. (Original) A radiation detector according to claim 16, wherein the wavelength conversion member and the sensor panel are bonded together by an adhesion layer, and the adhesion layer has such a thickness as a resolution response to light converted by the wavelength conversion member is at least 0.7 or larger.

20. (Previously Presented) A radiation detector according to claim 16, wherein the wavelength conversion member is made of Cesium Iodide.

21 to 42. (Cancelled).

43. (Currently Amended) An apparatus ~~according to claim 42~~, for manufacturing a scintillator panel having a wavelength conversion member for converting radiation into light, the apparatus comprising:

means for detecting projections formed on a surface of the wavelength conversion member of column-shaped crystal structure on a substrate;

means for measuring a height difference of the projections;

means for comparing the height difference with a predetermined threshold value; and

means for reducing the sizes of the projections in accordance with a comparison result,

wherein the threshold value is set to such a value as a resolution response of an image output through radiation detection takes at least a value of 0.7 or larger.

44. (Cancelled).

45. (Previously Presented) A method of manufacturing a scintillator panel having a wavelength conversion member for converting radiation into light disposed on a substrate comprising steps of:

forming a first protective layer on the wavelength conversion member of a column-shaped crystal structure formed on the substrate;

making smaller or removing through the first protective layer a projection on a surface of the wavelength conversion member; and

forming a second protective layer on the first protective layer after the step of making smaller or removing the projection.

46. (Previously Presented) A method according to Claim 45, wherein a height of the projection after the step of making smaller is 50 μm or smaller.

47. (Previously Presented) A method according to Claim 45, wherein the projection is made smaller by crushing the projection.

48. (Previously Presented) A method according to Claim 45, wherein the projection is made smaller by abrading the projection.

49. (Previously Presented) A method according to Claim 45, wherein the projection is made smaller by cutting off the projection.

50. (Previously Presented) A method according to Claim 45, wherein the projection is made smaller by a laser.

51. (Previously Presented) A method according to Claim 46, wherein prior to making smaller the projection, a height of the projection is measured, and, when the height measured exceeds 50 μm , the projection is made smaller.

52. (Previously Presented) A method according to Claim 51, wherein the measuring of the height of the projection is conducted based on a result of detecting an image contrast of a surface of the first protective layer.

53. (Previously presents) A method of manufacturing a radiation detector having a scintillator panel provided with a wavelength conversion member for converting radiation into light disposed on a substrate, and a sensor panel for detecting light converted by the wavelength conversion member, comprising steps of:

forming a first protective layer on the wavelength conversion member of column-shaped crystal structure formed on the substrate;

making smaller or removing through the first protective layer a projection on a surface of the wavelength conversion member;

forming a second protective layer on the first protective layer after the step of making smaller and removing the projection; and

bonding the scintillator panel with the sensor panel after the step of forming the second protective layer.

54. (Previously Presented) A method according to Claim 53, wherein the scintillator panel and the sensor panel are bonded together through an adhesive layer with a thickness of 50 μm or smaller.